

ABSTRACT OF THE DISCLOSURE

Described is a method for fabricating a semiconductor device having an FET of a trench-gate structure obtained by disposing a conductive layer, which will be a gate, in a trench extended in the main surface of a semiconductor substrate, wherein the upper surface of the trench-gate conductive layer is formed equal to or higher than the main surface of the semiconductor substrate. In addition, the conductive layer of the trench gate is formed to have a substantially flat or concave upper surface and the upper surface is formed equal to or higher than the main surface of the semiconductor substrate. Moreover, after etching of the semiconductor substrate to form the upper surface of the conductive layer of the trench gate equal to or higher than the main surface of the semiconductor substrate, a channel region and a source region are formed by ion implantation. The semiconductor device thus fabricated according to the present invention is free from occurrence of a source offset.